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(54) Title: **BIOCATALYTIC MANUFACTURING OF (METH)ACRYLYLCHOLINE OR 2-(N,N-DIMETHYLAMINO)ETHYL (METH)ACRYLATE**

(57) Abstract: A biocatalytic method for the synthesis of 2-(N,N-dimethylamino)ethanol and/or choline esters of acrylic acid and/or methacrylic acid, namely a method or process for the manufacture of acrylylcholine and/or methacrylylcholine, comprising reacting 2-(N,N-dimethylamino)ethanol and/or choline with acrylyl-CoA and/or methacrylyl-CoA in the presence of a biocatalyst with choline acetyltransferase activity, where preferably the acrylyl-CoA and/or methacrylyl-CoA is formed by reaction of acrylate and/or methacrylate with coenzyme A in the presence of an energy providing substance and a biocatalyst with S-acetyl coenzyme A synthetase activity (acetyl CoA synthetase activity); to (especially transformed, that is genetically modified) organisms having choline acetyltransferase activity and preferably in addition the acetyl CoA synthetase activity and their use in said process or method; the use of a biocatalyst with choline acetyltransferase activity to carry out the transfer of the (meth)acrylyl moiety from (meth)acrylyl CoA to 2-(N,N-dimethylamino)ethanol and/or choline, in order to manufacture 2-(N,N-dimethylamino)ethyl(meth)acrylate and/or (meth)acrylylcholine; and further uses, organisms, processes and methods as described in the specification.



WO 2005/090586 A1